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ABSTRACT

This study assessed those areas of the college general education curriculum that are rated as most important to entering college students and those areas of the curriculum in which students feel the most confident (i.e., in terms of their abilities). Focus was on assessing the effects of the general education requirements that were established in 1988 at the University of Louisville (Kentucky). In the summer and fall of 1992, 756 first-year college students were assessed using a 23-item questionnaire that listed skills and outcomes of general education (e.g., being able to write well). Items were rated on five-step scales of importance and confidence. Various statistics (mean scores for item ratings, correlation coefficients describing relationships among ratings, and factor analyses) were calculated. Students rated as highest in importance several items related to communication skills (effective speaking and writing). Items related to science, mathematics, and history were toward the middle. Items low in importance were those related to the arts. A similar pattern was found for confidence ratings. Mean importance ratings and mean confidence ratings were positively correlated. Separate factor analyses were done on the importance and confidence ratings; results were similar for both. Five factors accounted for about 60 percent of the variance in ratings (historical/cultural understanding, science/mathematics, arts, communication, and behavioral science). Three figures; 15 tables; and 3 forms of the attitude measure are included. (Author/RLC)

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Measuring First-Year College Students On Attitudes Toward General Education Outcomes

Joseph M. Petrosko

University of Louisville

Paper presented at the annual meeting of the Mid-South Educational Research Association, Knoxville, Tennessee, November 1992

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ABSTRACT

Measuring First-Year College Students On Attitudes Toward General Education Outcomes

Joseph M. Petrosko

University of Louisville

The major purpose of this study was two-fold: a) to determine what areas of the college general education curriculum were rated as most important to entering college students, and b) to determine those areas of the curriculum in which students felt the most confident (i.e., in terms of their ability). A sample of 756 first-year college students were measured with a 23-item questionnaire that listed skills and outcomes of general education (e.g., "Being able to write well.") Items were rated on five-step scales of importance and confidence.

A variety of statistics were calculated, including mean scores for item ratings, correlation coefficients describing relationships among ratings, and factor analyses. Students tended to rate as highest in importance several items dealing with communication skills (effective speaking and writing). Items related to science, mathematics, and history were toward the middle. Items low in importance were those related to the arts. A similar pattern was found for confidence ratings. Mean importance ratings and mean confidence ratings were positively correlated ($r = .67$, $p < .01$).

Separate factor analyses were performed on the importance ratings and confidence ratings. Results were similar for both: five factors accounted for about 60% of the variance in the ratings. Factors were: a) Historical/Cultural Understanding, b) Science/Mathematics, c) Arts, d) Communication, and e) Behavioral Science.

In recent years, many colleges and universities have strengthened or revived general education requirements. The renewed interest in general education has arisen for several reasons. One explanation is that a reaction occurred to critics of higher education who decried the lack of common academic experience of students. Critics argued that widespread experimentation at many campuses during the 1960's led to both a proliferation of courses and a reduction in required courses. It was argued that these factors contributed to a lack of focus in higher education. A lessening of requirements meant that it was possible (and is still possible at some places) for two graduates of the same institution to have taken almost no courses in common. In the minds of some (e.g., Bloom, 1987), this lack of commonality raises profound questions about the meaning of higher education at the undergraduate level.

The call for an increase in required courses was answered by many schools in the late 1980's. Institutions, with the support of accrediting agencies, began effecting changes in the undergraduate curriculum. Revision of undergraduate requirements (well-publicized at Harvard and Stanford universities) occurred at many colleges and universities, both private and public. In a survey of 226 colleges and universities, Gaff and Wasescha (1991) reported that 68 percent of institutions had recently changed their course distribution in general education. Futhermore, 64 percent of the institutions reported adding new courses to the curriculum (e.g., freshman seminars). Clearly, changes in general education have been widespread.

A renewal of general education in the 1980's was accompanied by an interest in determining what happens to students who take the prescribed courses in the general education curriculum. Arriving almost simultaneously with new interest in general education came the assessment movement in higher

education. Assessment became important because regional accrediting organizations and state coordinating boards began feeling pressure to provide accountability data to the many constituencies of higher education, including taxpayers.

Strategies for general education assessment

The researcher who wishes to assess the effects of general education faces many challenges. Students can fulfill general education requirements by taking many possible combinations of courses. Thus, there is no consistent experience or "treatment" that constitutes the program. Because all students at an institution must complete the general education requirement, there is no realistic possibility of using student "controls" who are not affected by the curriculum and could be used as a comparison group. Students come into college with widely varying levels of preparation. At many public institutions, an entering class will have students ranging from National Merit Scholars to students with academic deficiencies who must take "developmental" courses before they can earn college credits. The level of academic preparation of students, whether high or low, will undoubtedly affect how much benefit is obtained from general education.

Despite the obstacles just mentioned (and others), efforts have been made at many institutions to investigate general education. Perhaps an old principle of social science is operating here--the more difficult it is for a phenomenon to yield reliable and valid data, the more likely it is that people want data about it! The advice from virtually all persons in the field of higher education assessment (e.g. Ewell, 1991) is to measure a variety of outcomes in a variety of different ways. Following this philosophy of methodological and measurement diversification (viz. consistent with the idea

of "triangulation" of data sources), the overall portrait of general education should emerge.

In the cognitive domain, it is possible to measure student academic progress with standardized instruments. Three commonly used instruments are the ACT-COMP, published by American College Testing; Academic Profile, from Educational Testing Service; and College BASE from Riverside Publishing Company. There are also tests constructed by states and individual institutions. In the affective domain, standardized instruments are not frequently cited in the literature. It is common for institutions to construct their own measures.

The purpose of this paper is to describe the first use of a locally-constructed instrument that was designed to measure student attitudes about general education. A description will be given of its development and the results of using the instrument with a sample of over 700 first year students. In addition, suggestions for future research with the instrument will be identified.

Method

This study is an outgrowth of the Assessment of General Education (AGE) Project, begun by the University of Louisville in spring 1991. The purpose of the project is to assess the effects of the general education requirements that were established in 1988. Consistent with the suggestions of many authors, a multi-faceted approach to assessment is being pursued in the AGE project. Both qualitative and quantitative methods are being employed. Most efforts are being placed on studies in three areas:

1. Studies of student portfolios obtained for some popular general education courses,

2. Studies of student academic achievement using the short form of the Academic Profile, published by Educational Testing Service (ETS),

3. Studies of student attitude, using locally constructed questionnaires.

This paper concerns the third area mentioned above.

Instrument

In summer 1991, several instruments were developed to measure student attitudes about general education. One set of instruments was aimed at entering students, i.e., first year students with few, if any, college credits. A second set of instruments was developed to measure attitudes of exiting students, i.e., those who completed general education requirements, mostly third and fourth year undergraduates. In fall 1991 and spring 1992 the instruments were revised and pilot-tested. Since this study reports data on only incoming students, only instruments aimed at entering students will be described. However, development and pilot-testing procedures were similar for the exiting students questionnaires.

A multi-step process was used to develop instruments to measure attitudes of incoming students. First, the rationale for the university's general education was examined. This was contained in a document produced in 1988 that gave reasons why certain curriculum areas were included in general education. The document was analyzed to yield a set of statements which could be rated by students. The statements were outcomes that general education is designed to foster. For example, one item was this: "Being able to write well." A total of 23 such items were identified; they covered a wide range of curricular areas and were purposely designed to accurately reflect the specific language of the document giving the rationale of general education.

The 23 general education outcomes were attached to two sets of rating

scales. The first required students to rate "how important these outcomes are to your college education." A five-step scale was used, ranging from "1 = Very low importance," to "5 = Very high importance." The rating of 0 (zero) was to be used if the student could not make a judgement. The second scale required students to rate the same outcomes in terms of "how confident you are of your ability in these areas." A five-step scale was used, ranging from "1 = Very low confidence," to "5 = Very high confidence." Again, a rating of 0 (zero) was to be used if the student could not make a judgement.

Why rate importance and confidence? There are several reasons for this. First, it makes sense to learn what areas of the curriculum students consider important. This can throw light on other data--for instance, achievement of students in courses and on tests. If students perform poorly in certain areas, it might be partly explained by the fact that students do not consider the areas important. (Note. The preceding statement does not constitute an endorsement of student lack of interest in certain educational outcomes. It only reflects the reality that, for whatever reasons, not every area of the curriculum is perceived the same in importance by students, and this fact has some impact on their academic performance.)

In a similar fashion, knowing how confident students are of their ability in certain areas may help explain patterns of student behavior. For example, students may avoid certain college experiences (taking certain courses or participating in certain activities) because they have relatively high confidence of their existing abilities in an area.

Having both importance and confidence ratings might yield interesting comparative data. Are there some college outcomes that are rated high in importance, but low in confidence? Might there be areas where the pattern is

vice-versa: where students are high in confidence, but low in importance?

In addition, importance and confidence ratings can be measured on entering students and results compared with data obtained from exiting students. Questions like these might then be addressed. Are their changes in average level of importance of certain educational outcomes from the first-year of college to the third and fourth years? Are students more confident of their abilities in certain areas after general education than before?

In addition to the five-step rating scales for importance and confidence, students were asked to do ranking. At the end of the rating scales, they were asked to look back at the 23 items and select the top three items in terms of importance and the top three in confidence. It was hoped that this would force some distinctions among items. If there were halo effects causing students to rate many items as 5, at least the ranks would provide some idea of which items were at the very top in importance and confidence. After the ranking section, the questionnaire had 6 blank lines where students could explain, in their own words, any of their rating scale or ranking scale answers.

In the last part of the instrument, students had to answer three background questions. First, they had to give their educational level (Freshman, Sophomore, Junior, Senior, Have completed a bachelor's degree). Second, students had to report their latest grade point average. For entering students this was usua'ly their high school GPA (less than 2.00, 2.00-2.49, 2.50-2.99, 3.00-3.49, 3.50-4.00). Finally, students had to write down their current or intended college major.

In pilot testing, it was found that it took students 15 to 20 minutes to complete the instrument. To allow more flexibility in data collection, it was decided to develop two shorter versions of the full survey. On one, students

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rated and ranked general education outcomes only for importance. On the other version, students judged only confidence. These shorter versions take about 10 to 15 minutes to complete and can be administered when data collection times are very brief.

In summary, the three different instruments to measure attitudes toward general education outcomes by entering college students were:

Form AB measuring importance and confidence

Form A measuring importance

Form B measuring confidence.

Photo-reduced copies of these appear in Appendix A. The originals appear on legal size paper (8 1/2 by 17 inches).

Student subjects

The instruments described above were administered to a sample of incoming students during summer and fall 1992. Form AB was taken by 392 students, Form A by 180 and Form B by 184. Thus, in total, 756 students were tested. Students were not a random sample of incoming freshmen. Data were collected during several summer orientation sessions and testing had to accommodate scheduled events for students. Most of the students who took form AB had been identified as having to take at least one developmental course (e.g., in mathematics or English) in their first year as college students. However, a large proportion of incoming students must take at least one developmental course, so this group was not greatly below average in academic preparation. Based on the judgement of university officials who were familiar with summer orientation, students who took Form AB were considered fairly typical of incoming students. Most of the students who took forms A and B were entering engineering school. Many of these had above-average academic backgrounds.

Results

Data from the completed questionnaires were analyzed in a variety of ways, and a number of different descriptive and inferential statistics are reported below. Students who took form AB of the questionnaire had to rate and rank the items in terms of both importance and confidence. Students who used form A gave only importance ratings, while users of form B gave only confidence ratings. For most of the analyses reported below, the maximum amount of data on a given variable were reported. For example, when importance ratings are discussed, the data consisted of both: a) ratings of students who took the AB form, and b) the ratings from students who took the A form. All analyses were performed on an IBM 3090 mainframe computer using the SPSS-X software package (Norusis, 1985).

Basic statistics

Mean ratings Mean importance ratings were calculated for the 23 items and were arranged in highest-to-lowest order. As can be seen in Table 1, items rated highest covered written and oral communication, and several affective outcomes like "having moral and intellectual sensitivity." Outcomes and skills related to mathematics, the social and natural sciences, and history fell in the middle range, and items related to the arts were rated lowest.

A similar process of ranking mean ratings was performed for confidence data and the results shown in Table 2. The confidence means had a similar rank-order as the importance means. Again, communication and affective outcomes were relatively high, science, mathematics, and history were toward the middle, and arts areas relatively low.

The correlation between importance ratings and confidence ratings was by no means perfect. In an attempt to locate discrepancies between perceptions of importance and confidence, Table 3 was constructed. This shows, item-by-item, the importance and confidence ranks and the discrepancies between them. A

discrepancy was defined as the importance rank minus the confidence rank. Items with negative discrepancy values are those in which importance ratings were relatively higher than confidence ratings. Items with positive discrepancy values are those in which confidence ratings were relatively higher than importance ratings.

The largest negative discrepancy was for the item "Being able to make effective oral presentations." Students ranked this as quite important (fourth out of 23 items). However, they were not very confident of their ability in this area (rank of 20 in confidence out of 23 items). The largest positive discrepancy was for "Enjoying the arts." Students ranked this as relatively low in importance (22 out of 23 items). However, they were relatively confident of their ability in this area (rank of 9 out of 23 items).

Figure 1 is graphic illustration of the relationship between importance means and confidence means. It is a scattergram showing the relationship between the importance and confidence ratings. A moderately positive correlation was obtained, $r = .67$, $df = 21$, $p < .001$. The two items with the greatest discrepancies in ranks (those just discussed in Table 3) are identified with arrows as "outliers" from the regression line.

Items ranked in the "top three" After rating each item, students were asked to go back and examine the items and list those that they ranked number 1, 2, and 3 in importance and number 1, 2, and 3 in confidence. It was thought that this second procedure would add to the information obtained from the ratings. Specifically, it would force some distinctions among items and act as "safety net" if the ratings did not work very well. For example, if items were all rated nearly the same, the ranks might at least allow an identification of the items at the very top of the importance and confidence dimensions.

For efficiency of reporting, it was decided to count how many students ranked an item in the top three. Then the percentage of students mentioning

the item was calculated. Table 4 shows the results of this analysis for importance rankings. The top item was "Being able to write well." This was ranked as 1, 2 or 3 by 209 students out of the 572 students (37%) who completed importance rankings.

Comparison of Table 4 with Table 1 shows many similarities. Generally speaking, items that were identified as ranking in the top three in importance were also ones that obtained high average importance ratings. The correlation between average importance ratings and the ranking data (numbers of students putting the item in the top three) was high positive, $r = .90$, $df = 21$, $p < .001$.

A similar situation occurred with confidence rankings and confidence ratings. Comparison of Table 5 with Table 2 shows that items that were identified as ranking in the top three in confidence were also ones that obtained high average confidence ratings. The correlation between average confidence ratings and the ranking data was high positive, $r = .86$, $df = 21$, $p < .001$.

Differences between high and low items The analyses reported above focused on differences among items: on items that were low and items that were high in importance and confidence. The reader should recognize that the range of the mean ratings shown in Tables 1 and 2 was not that extreme. To facilitate a further understanding of the ratings, Tables 6 and 7 were constructed.

In examining Table 6, one can certainly see differences between the top five items in importance and the bottom five items. However, even in the low importance items, about 75% to 80% marked the response categories "Medium," or "High," or "Very High" in importance. Similarly, in Table 7 it is evident that the items that were lowest in average confidence ratings had a fairly large percentage of students using the middle through very high end of the response

categories. It is fair to conclude that only a small percentage of students marked any of the 23 items as "Very Low" in importance or stated that their level of confidence in the area was "Very Low."

Table 1

Means and Standard Deviations of 23 General Education Outcomes Rated in IMPORTANCE by 550 Entering College Students

Item	Rank	Mean	SD
14. Being able to write well in a specific area (e.g., in the area of your major)	1	4.50	.72
1. Being able to write well	2	4.37	.73
13. Having moral and intellectual sensitivity	3	4.19	.86
3. Being able to make effective oral presentations	4	4.08	.92
5. Understanding the world from a variety of viewpoints	5	4.07	.93
.....			
8. Valuing cultural diversity in our society	6	4.03	.96
21. Realizing how past events can affect the present	7	3.93	.95
19. Knowing about nations or cultures other than the United States	8	3.75	1.01
10. Understanding theories in the sciences (e.g. biology, chemistry, physics)	9.5	3.73	1.04
22. Understanding fundamental principles of individual human behavior (e.g., psychology)	9.5	3.73	.97
.....			
2. Understanding fundamental principles of social behavior (e.g., sociology)	11	3.72	.89
4. Logically analyzing arguments using statistical or mathematical reasoning	12.5	3.70	.96
18. Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)	12.5	3.70	1.01
12. Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)	14	3.61	.97
7. Understanding mathematical presentations of information from the natural or social sciences	15	3.60	.97
.....			
16. Understanding of history (i.e., history of nations)	16	3.46	1.02
17. Understanding of the history of some specific field (e.g. history of music, history of science)	17	3.45	.97
9. Understanding how historical evidence is interpreted	18	3.30	1.00
23. Understanding how different arts respond to cultural, political, or moral issues	19	3.25	1.09
11. Understanding how the arts reveal human experience	20	3.23	1.03
.....			
15. Being able to perform in an artistic field	21	3.09	1.07
6. Enjoying the arts	22	3.05	1.09
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)	23	3.01	1.03

Table 2

Means and Standard Deviations of 23 General Education Outcomes Rated on CONFIDENCE by 550 Entering College Students

Item	Rank	Mean	SD
13. Having moral and intellectual sensitivity	1	4.06	.82
8. Valuing cultural diversity in our society	2	3.79	.98
5. Understanding the world from a variety of viewpoints	3	3.74	.88
21. Realizing how past events can affect the present	4	3.73	.94
14. Being able to write well in a specific area (e.g., in the area of your major)	5	3.65	.95
.....			
2. Understanding fundamental principles of social behavior (e.g., sociology)	6	3.61	.92
1. Being able to write well	7	3.50	.86
22. Understanding fundamental principles of individual human behavior (e.g., psychology)	8	3.42	.97
6. Enjoying the arts	9	3.36	1.10
12. Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)	10	3.35	.98
.....			
16. Understanding of history (i.e., history of nations)	11	3.30	.98
9. Understanding how historical evidence is interpreted	12	3.23	.98
19. Knowing about nations or cultures other than the United States	13	3.20	.97
10. Understanding theories in the sciences (e.g. biology, chemistry, physics)	14.5	3.17	1.03
17. Understanding of the history of some specific field (e.g. history of music, history of science)	14.5	3.17	.98
.....			
11. Understanding how the arts reveal human experience	16.5	3.15	1.01
18. Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)	16.5	3.15	1.01
4. Logically analyzing arguments using statistical or mathematical reasoning	18	3.12	.96
23. Understanding how different arts respond to cultural, political, or moral issues	19	3.06	1.02
3. Being able to make effective oral presentations	20	3.05	1.05
.....			
7. Understanding mathematical presentations of information from the natural or social sciences	21	3.04	.96
15. Being able to perform in an artistic field	22	2.99	1.14
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)	23	2.86	1.03

Table 3

Ranks of Average Importance Ratings and Average Confidence Ratings and Discrepancies in Ranks

Item	Rank in Importance	Rank in Confidence	Discrepancy	Greatest Discrepancies
1	2	7	- 5	
2	11	6	5	
3	4	20	- 16	<------- Being able to make effective
4	12.5	18	- 5.5	oral presentations
5	5	3	2	
	.....			
6	22	9	13	<------- Enjoying the arts
7	15	21	- 6	
8	6	2	4	
9	18	12	6	
10	9.5	14.5	- 5	
	.....			
11	20	16.5	3.5	
12	14	10	4	
13	3	1	2	
14	1	5	- 4	
15	21	22	- 1	
	.....			
16	16	11	5	
17	17	14.5	2.5	
18	12.5	16.5	- 4	
19	8	13	- 5	
20	23	23	0	
	.....			
21	7	4	3	
22	9.5	8	1.5	
23	19	19	0	

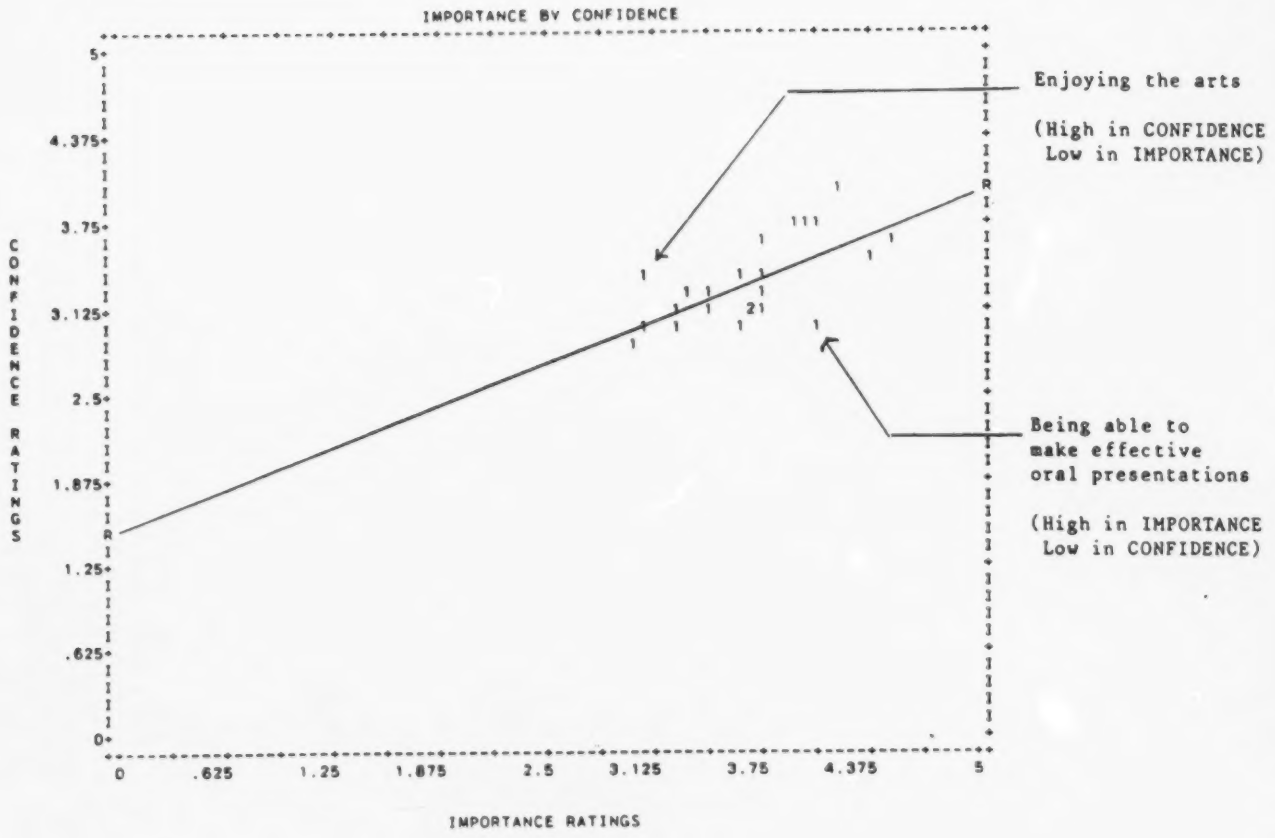

Figure 1. Scatterplot of IMPORTANCE mean ratings and CONFIDENCE mean ratings showing the two most discrepant items.

Table 4

Number and Percentage of 572 Entering College Students Who Ranked 23 General Education Outcomes in the Top Three in IMPORTANCE

Item	Number of students ranking item in the top three	Percentage
1. Being able to write well	209	37
5. Understanding the world from a variety of viewpoints	158	28
13. Having moral and intellectual sensitivity	150	26
3. Being able to make effective oral presentations	134	23
14. Being able to write well in a specific area (e.g., in the area of your major)	126	22
.....		
8. Valuing cultural diversity in our society	111	19
10. Understanding theories in the sciences (e.g. biology, chemistry, physics)	83	15
19. Knowing about nations or cultures other than the United States	81	14
21. Realizing how past events can affect the present	74	13
4. Logically analyzing arguments using statistical or mathematical reasoning	73	13
.....		
18. Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)	73	13
2. Understanding fundamental principles of social behavior (e.g., sociology)	59	10
22. Understanding fundamental principles of individual human behavior (e.g., psychology)	55	10
12. Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)	46	8
7. Understanding mathematical presentations of information from the natural or social sciences	41	7
.....		
16. Understanding of history (i.e., history of nations)	26	5
6. Enjoying the arts	23	4
15. Being able to perform in an artistic field	22	4
23. Understanding how different arts respond to cultural, political, or moral issues	17	3
17. Understanding of the history of some specific field (e.g. history of music, history of science)	16	3
.....		
11. Understanding how the arts reveal human experience	15	3
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)	7	1
9. Understanding how historical evidence is interpreted	6	1

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Table 5

Number and Percentage of 576 Entering College Students Who Ranked 23 General Education Outcomes in the Top Three in CONFIDENCE

Item	Number of students ranking item in the top three	Percentage
13. Having moral and intellectual sensitivity	172	30
5. Understanding the world from a variety of viewpoints	128	22
8. Valuing cultural diversity in our society	126	22
1. Being able to write well	125	22
21. Realizing how past events can affect the present	101	18
.....		
2. Understanding fundamental principles of social behavior (e.g., sociology)	94	16
4. Logically analyzing arguments using statistical or mathematical reasoning	89	15
14. Being able to write well in a specific area (e.g., in the area of your major)	87	15
3. Being able to make effective oral presentations	79	14
22. Understanding fundamental principles of individual human behavior (e.g., psychology)	76	13
.....		
10. Understanding theories in the sciences (e.g. biology, chemistry, physics)	64	11
6. Enjoying the arts	63	11
12. Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)	62	11
16. Understanding of history (i.e., history of nations)	55	10
18. Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)	54	9
.....		
15. Being able to perform in an artistic field	48	8
19. Knowing about nations or cultures other than the United States	41	7
7. Understanding mathematical presentations of information from the natural or social sciences	38	7
9. Understanding how historical evidence is interpreted	25	4
17. Understanding of the history of some specific field (e.g. history of music, history of science)	24	4
.....		
11. Understanding how the arts reveal human experience	21	4
23. Understanding how different arts respond to cultural, political, or moral issues	12	2
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)	9	2

Table 6

Percentage of Students Who Fell in Five Response Categories for the Items Rated Highest and Lowest in IMPORTANCE

Items	Percentage of 572 students rating IMPORTANCE: Very Low	Low	Medium	High	Very High
Items ranked highest in IMPORTANCE					
14. Being able to write well in a specific area (e.g., in the area of your major)	< 1	1	8	29	61
1. Being able to write well	0	1	13	36	51
13. Having moral and intellectual sensitivity	1	3	17	36	44
3. Being able to make effective oral presentations	1	5	20	35	40
5. Understanding the world from a variety of viewpoints	1	5	21	35	39
Items ranked lowest in IMPORTANCE					
23. Understanding how different arts respond to cultural, political, or moral issues	7	16	37	26	14
11. Understanding how the arts reveal human experience	5	19	37	28	12
15. Being able to perform in an artistic field	7	21	38	23	11
6. Enjoying the arts	8	23	37	22	11
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)	8	23	39	23	8

Table 7

Percentage of Students Who Marked Five Response Categories for the Items Rated Highest and Lowest in CONFIDENCE

Items	Percentage of 576 students rating CONFIDENCE: Very Low	Low	Medium	High	Very High
Items ranked highest in CONFIDENCE					
13. Having moral and intellectual sensitivity	0	3	22	42	33
8. Valuing cultural diversity in our society	1	9	28	34	28
5. Understanding the world from a variety of viewpoints	1	5	32	42	20
21. Realizing how past events can affect the present	2	6	30	41	22
14. Being able to write well in a specific area (e.g., in the area of your major)	2	8	35	35	21
Items ranked lowest in CONFIDENCE					
23. Understanding how different arts respond to cultural, political, or moral issues	7	18	44	22	9
3. Being able to make effective oral presentations	7	22	41	21	10
7. Understanding mathematical presentations of information from the natural or social sciences	5	23	43	24	7
15. Being able to perform in an artistic field	10	24	36	19	12
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)	10	27	37	22	5

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Factor analyses

As another way of understanding the data, several factor analyses were performed of the importance ratings and the confidence ratings. First, the n = 471 cases with a complete set of importance ratings were factor analyzed using the principal components method of factor extraction. Two statistics supported the viability of the factor analysis. The Kaiser-Meyer-Olkin measure of sampling adequacy was .91, which is considered a high value (Norusis, 1985). In addition, the Bartlett test of sphericity had a chi-square value of 4741.9, $p < .001$, indicating there should be a rejection of the hypothesis that the 23 x 23 intercorrelation matrix derived from the importance ratings was an identity matrix.

There were five factors with eigenvalues greater than 1.00, and collectively these accounted for 61% of the variance in the ratings. The first factor accounted for 35% of the variance and the other four less than 10% each. Table 8 shows all varimax-rotated factor loadings that were .40 or greater. It can be seen that the orthogonal factors were these: a) history and cultural understanding, b) arts, c) science and mathematics, d) behavioral science, and e) communication. The factors fairly well reproduced the various subject-matter domains that were inherent in the various items.

The n = 443 cases with a complete set of confidence ratings were then factor analyzed using the principal components method of factor extraction. The Kaiser-Meyer-Olkin measure of sampling adequacy was .90, and the Bartlett test of sphericity had a chi-square value of 4366.7, $p < .001$. Both statistics supported a factor model. There were five factors with eigenvalues greater than 1.00, and collectively these factors accounted for 60% of the variance in the ratings. The first factor accounted for 35% of the variance and the other four less than 10% each. Table 9 shows all varimax-rotated factor loadings that were .40 or greater. It can be seen that the orthogonal factors for

confidence were very similar to the five factors extracted when the importance ratings were analyzed. Note, however, that items 5 and 8 which loaded on factor 1 for the importance ratings did not have loadings greater than .40 and did not load on any of the confidence factors.

In looking at the importance ratings, it was obvious all of the various ratings were moderately correlated with one another. While othogonal factors have some statistical and interpretative advantages, it is probably more realistic to assume that factors are correlated (Gorsuch, 1983). Thus, another set of factor analyses were done--this time with oblique rotation of factors. Table 10 shows the factor structure matrix from an oblimin rotation of the importance factors. The user-selected parameter of delta was chosen to be zero, resulting in the maximum possible oblique rotation (Norusis, 1985).

The factors shown in Table 10 are similar to the varimax factors obtained in Table 8. Each factor represented a subject-matter domain. Table 11 shows the correlations among the five factors. It can be seen that they were moderately correlated with one another. Finally, Table 12 shows the results of a second-order factor analysis. Factor scores for each subject were created based on the oblique rotation. Then the factor scores were themselves factor-analyzed and the varimax loadings shown in Table 12. Three factors collectively accounted for 74% of the variance in the five first-order factors. Historical/Cultural Understanding loaded high on the first factor, Arts and Behavioral Science on the second, and Science/Mathematics and Communication (with a negative loading) on the third factor.

A oblique rotated factor analysis was also done with the confidence ratings. Shown in Table 13 is the factor structure matrix. It was similar to the varimax solution. Tables 14 and 15 show factor correlations and second-order factor loadings. Three second-order factors collectively accounted for 73% of the variance in the five first-order factors. Arts (negative loading)

and Communication both loaded high on the first second-order factor, Behavioral Science on the second factor, and Historical/Cultural Understanding (negative loading) and Science/Mathematics on the third factor.

Figures 2 and 3 are three dimensional pictures that show the relationship among the importance factors and the confidence factors. The location of each factor in the three dimensional space was obtained by using the factor loadings on the three second-order factors as coordinates. Thus, Table 12 loadings were the basis for Figure 2 and Table 15 loadings were the basis for Figure 3.

It is hard to succinctly summarize the pictures. In each case, Historical/Cultural Understanding seems to be separated from the other factors. Perhaps this reflects the fact that it always accounted for most variance. In addition, at least when the importance ratings were analyzed, several variables related to Historical/Cultural Understanding (e.g., Valuing cultural diversity) have an affective rather than cognitive character.

Table 8

Varimax Rotated Factor Loadings for 23 General Education Outcomes Rated in IMPORTANCE by Entering College Students

Item	Factors 1	2	3	4	5
16. Understanding of history (i.e., history of nations)	.72				
21. Realizing how past events can affect the present	.71				
19. Knowing about nations or cultures other than the United States	.70				
9. Understanding how historical evidence is interpreted	.62				
5. Understanding the world from a variety of viewpoints	.59				
8. Valuing cultural diversity in our society	.57				
13. Having moral and intellectual sensitivity	.48			.42	
.....					
15. Being able to perform in an artistic field		.81			
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)		.75			
6. Enjoying the arts		.73			
11. Understanding how the arts reveal human experience		.62		.44	
23. Understanding how different arts respond to cultural, political, or moral issues	.43	.57			
.....					
10. Understanding theories in the sciences (e.g. biology, chemistry, physics)			.85		
18. Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)			.81		
7. Understanding mathematical presentations of information from the natural or social sciences			.81		
4. Logically analyzing arguments using statistical or mathematical reasoning			.71		
17. Understanding of the history of some specific field (e.g. history of music, history of science)	.42		.43		
.....					
12. Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)				.74	
2. Understanding fundamental principles of social behavior (e.g., sociology)				.72	
22. Understanding fundamental principles of individual human behavior (e.g., psychology)				.66	
.....					
1. Being able to write well					.73
14. Being able to write well in a specific area (e.g., in the area of your major)					.70
3. Being able to make effective oral presentations					.69

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Table 9

Varimax Rotated Factor Loadings for 23 General Education Outcomes Rated in CONFIDENCE by Entering College Students

Item	Factors 1	2	3	4	5
16. Understanding of history (i.e., history of nations)	.80				
19. Knowing about nations or cultures other than the United States	.70				
9. Understanding how historical evidence is interpreted	.65				
17. Understanding of the history of some specific field (e.g. history of music, history of science)	.61				
21. Realizing how past events can affect the present	.59				
.....					
15. Being able to perform in an artistic field		.81			
6. Enjoying the arts		.80			
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)		.70			
11. Understanding how the arts reveal human experience		.61			
23. Understanding how different arts respond to cultural, political, or moral issues		.52			
.....					
7. Understanding mathematical presentations of information from the natural or social sciences			.80		
18. Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)			.77		
10. Understanding theories in the sciences (e.g. biology, chemistry, physics)			.76		
4. Logically analyzing arguments using statistical or mathematical reasoning			.70		
.....					
12. Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)				.73	
22. Understanding fundamental principles of individual human behavior (e.g., psychology)				.72	
2. Understanding fundamental principles of social behavior (e.g., sociology)				.72	
13. Having moral and intellectual sensitivity				.49	
.....					
1. Being able to write well					.78
14. Being able to write well in a specific area (e.g., in the area of your major)					.72
3. Being able to make effective oral presentations					.58
.....					
5. Understanding the world from a variety of viewpoints	No loading above .40 on any factor				
8. Valuing cultural diversity in our society	No loading above .40 on any factor				

Table 10

Loadings from Factor Structure Matrix of Oblimin Rotation for 23 General Education Outcomes Rated in IMPORTANCE by Entering College Students

Item	Factors 1	2	3	4	5
16. Understanding of history (i.e., history of nations)	.78				
21. Realizing how past events can affect the present	.76				
19. Knowing about nations or cultures other than the United States	.76				
9. Understanding how historical evidence is interpreted	.70				
5. Understanding the world from a variety of viewpoints	.66				
8. Valuing cultural diversity in our society	.63				
13. Having moral and intellectual sensitivity	.57				
17. Understanding of the history of some specific field (e.g. history of music, history of science)	.55				
.....					
10. Understanding theories in the sciences (e.g. biology, chemistry, physics)		.86			
7. Understanding mathematical presentations of information from the natural or social sciences		.83			
18. Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)		.83			
4. Logically analyzing arguments using statistical or mathematical reasoning		.73			
.....					
15. Being able to perform in an artistic field			-.83		
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)			-.81		
6. Enjoying the arts			-.78		
11. Understanding how the arts reveal human experience			-.73		
23. Understanding how different arts respond to cultural, political, or moral issues			-.70		
.....					
1. Being able to write well				.78	
14. Being able to write well in a specific area (e.g., in the area of your major)				.74	
3. Being able to make effective oral presentations				.71	
.....					
12. Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)					.82
2. Understanding fundamental principles of social behavior (e.g., sociology)					.77
22. Understanding fundamental principles of individual human behavior (e.g., psychology)					.76

Table 11

Factor Correlation Matrix of Oblimin Rotated Factors for 23 General Education Outcomes Rated in IMPORTANCE by Entering College Students

	Factors				
Factors	1	2	3	4	5
1. Historical/Cultural Understanding	1.00				
2. Science/Mathematics	.31	1.00			
3. Arts	-.43	-.23	1.00		
4. Communication	.29	.21	-.20	1.00	
5. Behavioral Science	.41	.20	-.38	.22	1.00

Table 12

Factor Loadings of Second-Order Factors for 23 General Education Outcomes Rated in IMPORTANCE by Entering College Students

	Second-Order Factor Loadings		
First-Order Factors	1	2	3
1. Historical/Cultural Understanding	[.94]	-.02	.00
2. Science/Mathematics	-.27	.03	[.74]
3. Arts	.42	[.77]	.02
4. Communication	-.26	.00	[-.74]
5. Behavioral Science	-.35	[.80]	.01

Note. Highest loadings shown in brackets.

Table 13

Loadings from Factor Structure Matrix of Oblimin Rotation for 23 General Education Outcomes Rated in CONFIDENCE by Entering College Students

Item	Factors 1	2	3	4	5
16. Understanding of history (i.e., history of nations)	.83				
19. Knowing about nations or cultures other than the United States	.74				
9. Understanding how historical evidence is interpreted	.72				
17. Understanding of the history of some specific field (e.g. history of music, history of science)	.71				
21. Realizing how past events can affect the present	.67				
5. Understanding the world from a variety of viewpoints	.49				
.....					
7. Understanding mathematical presentations of information from the natural or social sciences		.82			
18. Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)		.82			
10. Understanding theories in the sciences (e.g. biology, chemistry, physics)		.79			
4. Logically analyzing arguments using statistical or mathematical reasoning		.73			
.....					
15. Being able to perform in an artistic field			.83		
6. Enjoying the arts			.81		
20. Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)			.78		
11. Understanding how the arts reveal human experience			.73		
23. Understanding how different arts respond to cultural, political, or moral issues			.67		
.....					
1. Being able to write well				.82	
14. Being able to write well in a specific area (e.g., in the area of your major)				.80	
3. Being able to make effective oral presentations				.62	
.....					
22. Understanding fundamental principles of individual human behavior (e.g., psychology)					-.80
12. Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)					-.79
2. Understanding fundamental principles of social behavior (e.g., sociology)					-.76
13. Having moral and intellectual sensitivity					-.58
8. Valuing cultural diversity in our society					-.49

Table 14

Factor Correlation Matrix of Oblimin Rotated Factors for 23 General Education Outcomes Rated in CONFIDENCE by Entering College Students

	Factors				
Factors	1	2	3	4	5
1. Historical/Cultural Understanding	1.00				
2. Science/Mathematics	.30	1.00			
3. Arts	.41	.26	1.00		
4. Communication	.30	.20	.34	1.00	
5. Behavioral Science	-.44	-.26	-.39	-.31	1.00

Table 15

Factor Loadings of Second-Order Factors for 23 General Education Outcomes Rated in CONFIDENCE by Entering College Students

	Second-Order Factor Loadings		
First-Order Factors	1	2	3
1. Historical/Cultural Understanding	.24	.39	[-.80]
2. Science/Mathematics	.14	.16	[.61]
3. Arts	[-.88]	.23	.17
4. Communication	[.61]	.27	.36
5. Behavioral Science	-.07	[.96]	-.01

Note. Highest loadings shown in brackets.

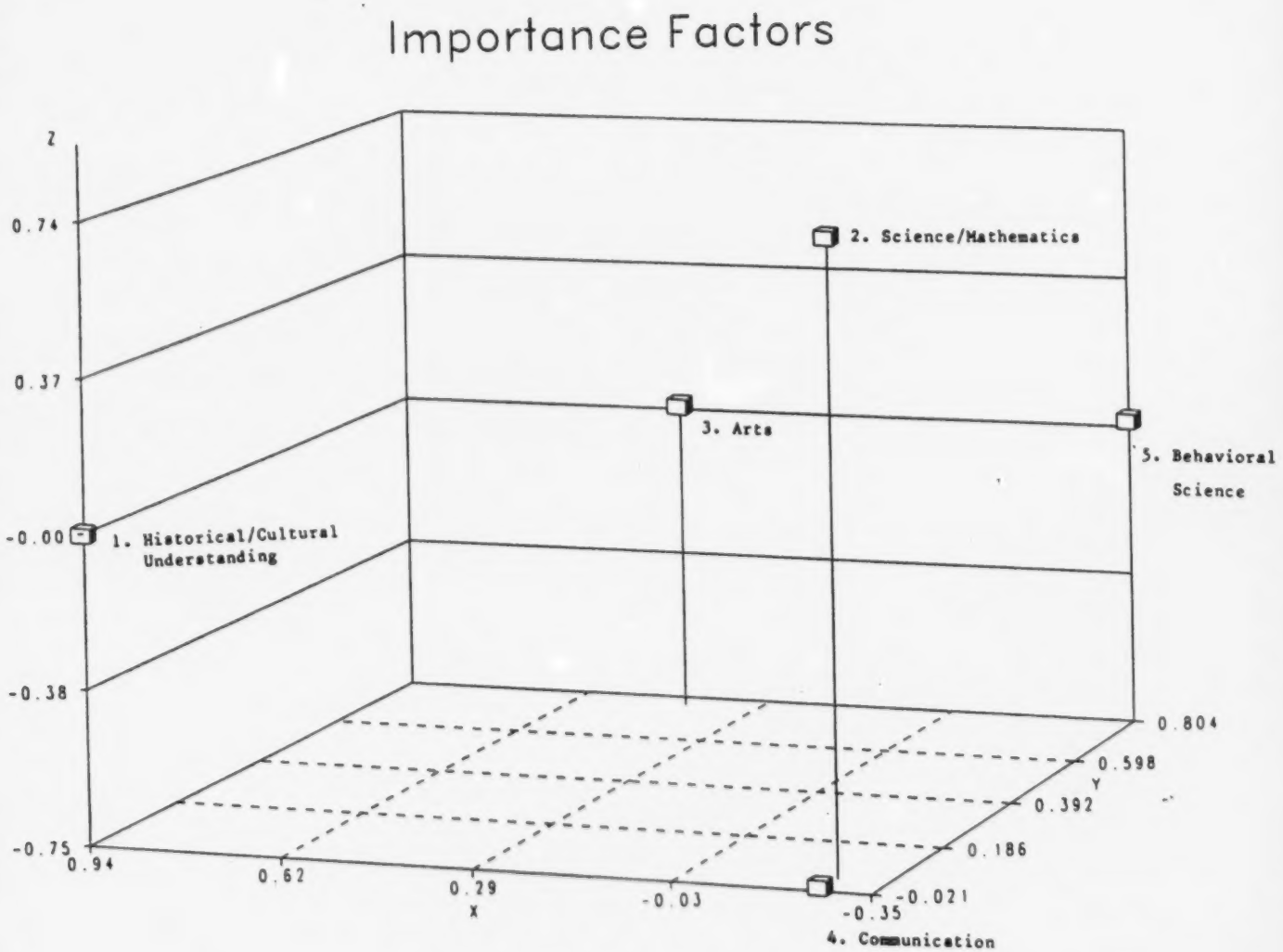

Figure 2. Five IMPORTANCE factors plotted by using loadings of three second-order factors.

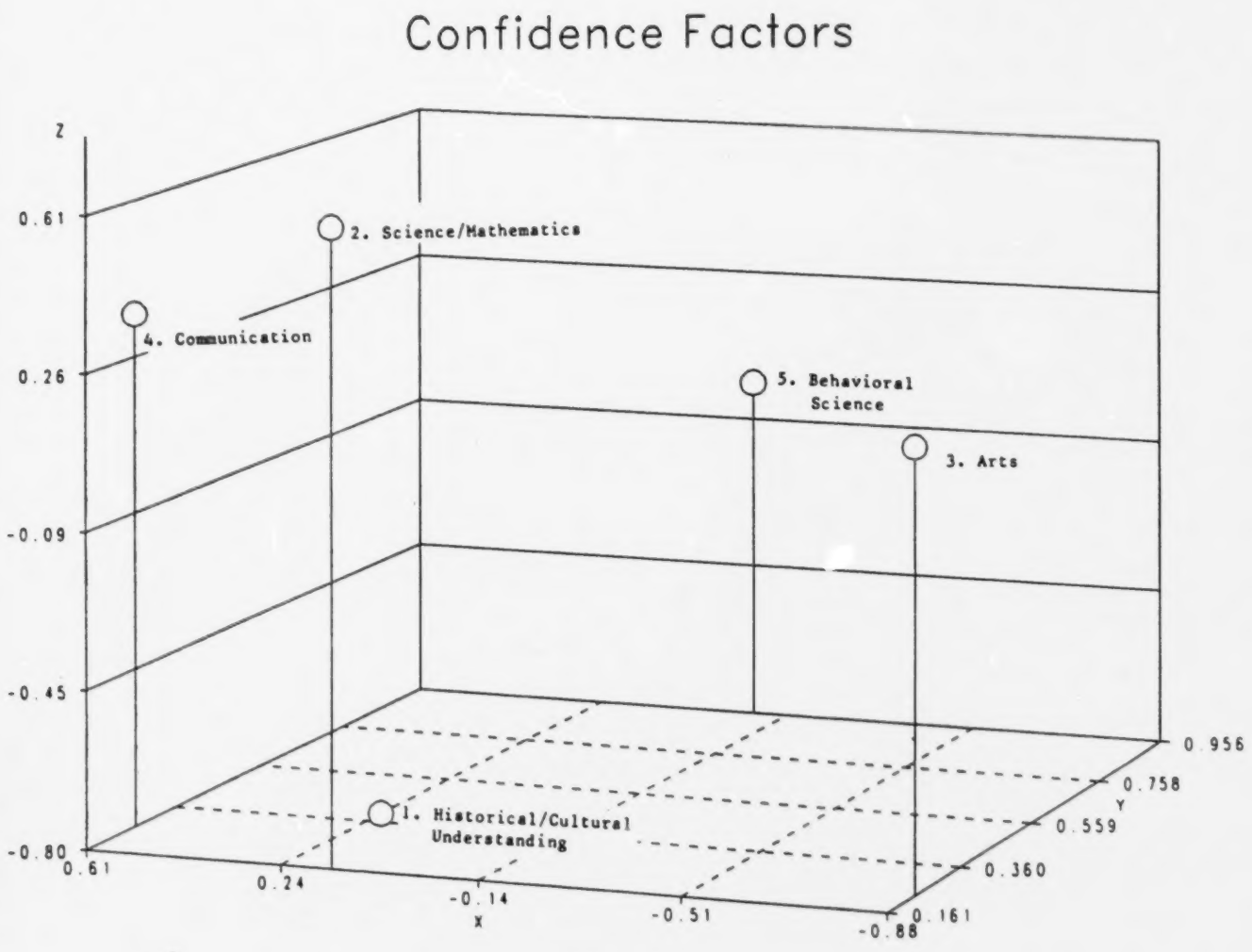

Figure 3. Five CONFIDENCE factors plotted by using loadings of three second-order factors.

Discussion

This study provided some useful information about the attitudes of entering college students toward 23 general education outcomes identified by university faculty. It was found that there were variations in the level of importance placed on outcomes. In addition, students had differing levels of confidence in their ability to perform in the 23 areas. The survey seemed to be successful in providing an overall measure of student opinion about general education outcomes.

Some comments are offered below regarding the results and future directions for research on student attitudes using the instrument.

1. Students believed in the importance of developing skills in writing and speaking. One of the more interesting findings was the discrepancy between the rated importance of "Being able to make effective oral presentations" and the rated confidence students had in this area. When instructors require students to make oral presentations, they may have some nervous students on their hands, but these students probably realize the importance of what is being required of them.

2. Upon reflection, it is not surprising which items were rated highest in confidence. Many of these are affective or rather general outcomes, rather than precisely defined intellectual skills. The very top item was "Having moral and intellectual sensitivity." Students may have read this as asking, in effect, "Are you a moral and intellectually sensitive person?" Few students would want to answer that they are not.

3. Importance ratings and confidence ratings were positively correlated. For those students who gave both ratings (i.e., those who completed form AB) some of this may have been partly induced by the rating form. However, the correlation occurred even between sets of ratings obtained from completely independent groups. Mean importance ratings were calculated on each item for

those subjects who completed form A (i.e., students who did only importance ratings). Then mean confidence ratings were calculated on each item for students who completed form B (i.e., students who did only confidence ratings). The two sets of mean ratings were then correlated, and the result was a significantly positive correlation coefficient, $r = .58$, $df = 21$, $p < .01$.

A number of explanations are possible for this correlation: a) students think something is important because they are already confident in it, b) students state that they are confident in something because they think it is important, c) both a. and b. are operating, d) other variables are involved in the relationship between importance and confidence. Future studies might be done to explore the relationship between these variables. Cognitive dissonance theory might provide a guide to hypothesis testing (e.g., when a student wants to make importance and confidence ratings on the same item discrepant, this causes dissonance, which can be resolved by making the ratings similar).

4. More research could be done on determining how students are interpreting items. There has not yet been a systematic study of the free-response part of the questionnaire. However, that section of the instrument was not heavily used. A cursory inspection of responses showed that students often used it to simply emphasize their rating scale responses (e.g., by making a comment like, "I think writing is very important"). Interviews and more extensive written comments from students would be useful in helping discover how they understand the items.

5. Two variables measured on the questionnaire are still to be related to the importance and confidence ratings. These were college major and self-reported grade point average. Some preliminary analysis was done with grade point average, and results have proved interesting. A multivariate analysis of variance (MANOVA) was done on importance ratings. The dependent variables were the items that were rated as the top five in importance. The independent

variable was high school grade point average (four categories: 2.49 and less, 2.50-2.99, 3.00-3.49, and 3.50-4.00). There was no significant effect of GPA on the importance rating variables. A similar MANOVA was then done on the top five items in terms of confidence. There was a significant effect ($p < .05$) of GPA. Students with higher grade point averages had higher levels of confidence of their ability. More analysis, on other confidence ratings, seems warranted.

In summary, a variety of additional studies are possible with the existing data. Futhermore, future studies would be useful to help reveal more about student interpretation of the items and possible biases arising in completing the questionnaire.

Acknowledgements

This study could not have been completed without the help of a number of persons. The Assessment of General Education (AGE) Project is sponsored by the Office of the Provost of the University of Louisville. Provost Dr. Wallace Mann and Assistant Provost Dr. Sidney McPhee have been most supportive of the project since its inception. Dr. Ken Duckworth is the coordinator of the AGE project. He made useful suggestions about the content of the instrument and its possible uses. Graduate student assistant Ms. Susan Hodges did an expert job in the physical layout of the instrument and had suggestions regarding its content and design. She also facilitated data entry of completed questionnaires. A faculty advisory committee suggested changes in early versions of the questionnaires and allowed me to pilot-test the instrument in their classes. Advisory committee members were Drs. George Barnes, Allen Futrell, Brian Huot, Nathan Lipscomb, Wendy Pfeffer, and Amy Phelps.

Data collection would not have been possible without the fine cooperation of Ms. Janice Kaczmarek of the University Testing Center and Ms. Jenny Sawyer of the Student Orientation Program. From the College of Arts and Sciences, thanks go to Dr. Roselle Taylor, Dr. James Carter, Mr. Andrew Williams, and many faculty who allowed students in their courses to be tested. From the Preparatory Division, thanks to Dr. Christine Hall, Ms. Julia Lewis, and Mr. Blaine Hudson. From the Speed Scientific School, thanks to Dr. Brenda McAnulty and Ms. Gail Utley. Mr. David Miles of the University Computer center prepared the software to produce the three-dimensional plots in this report. Finally, a note of appreciation to the students who helped in revising the instrument, especially Mr. Jim Howard of the Student Government Association, and to the over 700 incoming students in summer and fall 1992 who completed the survey.

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Appendix A

UNIVERSITY OF LOUISVILLE

GENERAL EDUCATION QUESTIONNAIRE FOR ENTERING STUDENTS

Thank you for taking the time to complete this questionnaire. Because of your cooperation, the University of Louisville will have information about its general education program that will be helpful to faculty who are developing courses and to students who enroll in courses. You can be assured that responses to all questions are confidential. To complete this questionnaire, please follow the instructions below.

PART A

The following items describe outcomes of education. They include a number of abilities, skills, and personal qualities that a student can attain through the learning process.

In column A, please describe the degree to which you believe these outcomes are <u>important</u> to your college education. In column B, please describe how <u>confident</u> you are of your ability in these areas. Feel free to use the blank lines at the end of this block of questions to explain any of your answers.

For column A, place the number corresponding to your opinion of how important these outcomes <u>are to your college education</u>	***For column B, place the number corresponding to your opinion of how confident you are in <u>your ability in these areas</u>***
5 = Very high importance	**Very high confidence = 5**
4 = High importance	**High confidence = 4**
3 = Medium importance	**Medium confidence = 3**
2 = Low importance	**Low confidence = 2**
1 = Very low importance	**Very low confidence = 1**
0 = Cannot make a judgment	**Cannot make a judgment = 0**

	A		B
1.	____	Being able to write well	____
2.	____	Understanding fundamental principles of social behavior (e.g., sociology)	____
3.	____	Being able to make effective oral presentations	____
4.	____	Logically analyzing arguments using statistical or mathematical reasoning	____
5.	____	Understanding the world from a variety of viewpoints	____
6.	____	Enjoying the arts	____
7.	____	Understanding mathematical presentations of information from the natural or social sciences	____
8.	____	Valuing cultural diversity in our society	____
9.	____	Understanding how historical evidence is interpreted	____
10.	____	Understanding theories in the sciences (e.g., biology, chemistry, physics)	____
11.	____	Understanding how the arts reveal human experience	____
12.	____	Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)	____
13.	____	Having moral and intellectual sensitivity	____
14.	____	Being able to write well in a specific area (e.g., in your major area)	____
15.	____	Being able to perform in an artistic field	____
16.	____	Understanding of history (i.e., history of nations)	____
17.	____	Understanding of the history of some specific field (e.g. history of music, history of science)	____
18.	____	Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)	____

(OVER)

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5 = Very high importance	Very high confidence = 5
4 = High importance	High confidence = 4
3 = Medium importance	Medium confidence = 3
2 = Low importance	Low confidence = 2
1 = Very low importance	Very low confidence = 1
0 = Cannot make a judgment	Cannot make a judgment = 0

A		B
19. ____	Knowing about nations or cultures other than the United States	____
20. ____	Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)	____
21. ____	Realizing how past events can affect the present	____
22. ____	Understanding fundamental principles of individual human behavior (e.g., psychology)	____
23. ____	Understanding how different arts respond to cultural, political, or moral issues	____

Look back at the list of 23 items. In your opinion, which items are the top 3 in <u>importance</u>? Write the item numbers of these three in the blanks below:

Importance	Item Number
Rank 1	_____
Rank 2	_____
Rank 3	_____

What items are the top 3 in how confident you are of your ability in the area? Write the item number of these three in the blanks below:

Confidence	Item Number
Rank 1	_____
Rank 2	_____
Rank 3	_____

You may explain any of your answers below:

_____

_____

_____ _____

_____

_____

_____

PART B

Please answer the following background questions:

1. Indicate your educational level by circling the number corresponding to your response:

   1. Freshman
   2. Sophomore
   3. Junior
   4. Senior
   5. Have completed a bachelor's degree

2. Report your latest college grade point average (GPA) by circling the number corresponding to your response. If you are a first year student and have not yet earned a college GPA, report your high school GPA.

   1. less than 2.00
   2. 2.00 – 2.49
   3. 2.50 – 2.99
   4. 3.00 – 3.49
   5. 3.50 – 4.00

3. Report your current or intended major: _____. If you have not yet made a choice, write "undecided."

Thank you, again, for taking the time to help us improve the effectiveness of UofL's academic programs.
Best wishes to you in your academic endeavors!

UNIVERSITY OF LOUISVILLE

GENERAL EDUCATION QUESTIONNAIRE FOR ENTERING STUDENTS

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PART A

The following items describe outcomes of education. They include a number of abilities, skills, and personal qualities that a student can attain through the learning process.

In column A, please describe the degree to which you believe these outcomes are <u>important</u> to your college education. Feel free to use the blank lines at the end of this block of questions to explain any of your answers.

For column A, place the number corresponding to your opinion of how important these outcomes are to your college education

5 = Very high importance
4 = High importance
3 = Medium importance
2 = Low importance
1 = Very low importance
0 = Cannot make a judgment

	A	
1.	____	Being able to write well
2.	____	Understanding fundamental principles of social behavior (e.g., sociology)
3.	____	Being able to make effective oral presentations
4.	____	Logically analyzing arguments using statistical or mathematical reasoning
5.	____	Understanding the world from a variety of viewpoints
6.	____	Enjoying the arts
7.	____	Understanding mathematical presentations of information from the natural or social sciences
8.	____	Valuing cultural diversity in our society
9.	____	Understanding how historical evidence is interpreted
10.	____	Understanding theories in the sciences (e.g., biology, chemistry, physics)
11.	____	Understanding how the arts reveal human experience
12.	____	Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)
13.	____	Having moral and intellectual sensitivity
14.	____	Being able to write well in a specific area (e.g., in your major area)
15.	____	Being able to perform in an artistic field
16.	____	Understanding of history (i.e., history of nations)
17.	____	Understanding of the history of some specific field (e.g. history of music, history of science)
18.	____	Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)

(OVER)

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5 = Very high importance
4 = High importance
3 = Medium importance
2 = Low importance
1 = Very low importance
0 = Cannot make a judgment

A

19. ____ Knowing about nations or cultures other than the United States

20. ____ Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)

21. ____ Realizing how past events can affect the present

22. ____ Understanding fundamental principles of individual human behavior (e.g., psychology)

23. ____ Understanding how different arts respond to cultural, political, or moral issues

Look back at the list of 23 items. In your opinion, which items are the top 3 in importance? Write the item numbers of these three in the blanks below:

Importance	Item Number
Rank 1	_____
Rank 2	_____
Rank 3	_____

You may explain any of your answers below:

_____

_____

_____

_____

_____

_____

_____

_____

PART B

Please answer the following background questions:

1. Indicate your educational level by circling the number corresponding to your response:

   1. Freshman
   2. Sophomore
   3. Junior
   4. Senior
   5. Have completed a bachelor's degree

2. Report your latest college grade point average (GPA) by circling the number corresponding to your response. If you are a first year student and have not yet earned a college GPA, report your high school GPA.

   1. less than 2.00
   2. 2.00 – 2.49
   3. 2.50 – 2.99
   4. 3.00 – 3.49
   5. 3.50 – 4.00

3. Report your current or intended major: _____. If you have not yet made a choice, write "undecided."

Thank you, again, for taking the time to help us improve the effectiveness of UofL's academic programs.
Best wishes to you in your academic endeavors!

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Thank you for taking the time to complete this questionnaire. Because of your cooperation, the University of Louisville will have information about its general education program that will be helpful to faculty who are developing courses and to students who enroll in courses. You can be assured that responses to all questions are confidential. To complete this questionnaire, please follow the instructions below.

PART A

The following items describe outcomes of education. They include a number of abilities, skills, and personal qualities that a student can attain through the learning process.

In column B, please describe how confident you are of your ability in these areas. Feel free to use the blank lines at the end of this block of questions to explain any of your answers.

For column B, place the number corresponding to your opinion of how confident you are in your ability in these areas

Very high confidence = 5
High confidence = 4
Medium confidence = 3
Low confidence = 2
Very low confidence = 1
Cannot make a judgment = 0

		B
1.	Being able to write well	____
2.	Understanding fundamental principles of social behavior (e.g., sociology)	____
3.	Being able to make effective oral presentations	____
4.	Logically analyzing arguments using statistical or mathematical reasoning	____
5.	Understanding the world from a variety of viewpoints	____
6.	Enjoying the arts	____
7.	Understanding mathematical presentations of information from the natural or social sciences	____
8.	Valuing cultural diversity in our society	____
9.	Understanding how historical evidence is interpreted	____
10.	Understanding theories in the sciences (e.g., biology, chemistry, physics)	____
11.	Understanding how the arts reveal human experience	____
12.	Understanding strengths and limitations of social and behavioral sciences (e.g., psychology, sociology)	____
13.	Having moral and intellectual sensitivity	____
14.	Being able to write well in a specific area (e.g., in your major area)	____
15.	Being able to perform in an artistic field	____
16.	Understanding of history (i.e., history of nations)	____
17.	Understanding of the history of some specific field (e.g. history of music, history of science)	____
18.	Understanding methods of reasoning in the natural sciences (e.g. biology, chemistry, physics)	____

(OVER)

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Very high confidence = 5
High confidence = 4
Medium confidence = 3
Low confidence = 2
Very low confidence = 1
Cannot make a judgment = 0

		B
19.	Knowing about nations or cultures other than the United States	____
20.	Understanding how individual arts can be integrated into a single artistic product (e.g. in film, in architecture)	____
21.	Realizing how past events can affect the present	____
22.	Understanding fundamental principles of individual human behavior (e.g., psychology)	____
23.	Understanding how different arts respond to cultural, political, or moral issues	____

Look back at the list of 23 items. In your opinion, which items are the top 3 in how confident you are in your ability in the area? Write the item numbers of these three in the blanks below:

Confidence	Item Number
Rank 1	_____
Rank 2	_____
Rank 3	_____

You may explain any of your answers below:

_____

_____

_____

_____

_____

_____

_____

_____

_____

PART B

Please answer the following background questions:

1. Indicate your educational level by circling the number corresponding to your response:

   1. Freshman
   2. Sophomore
   3. Junior
   4. Senior
   5. Have completed a bachelor's degree

2. Report your latest college grade point average (GPA) by circling the number corresponding to your response. If you are a first year student and have not yet earned a college GPA, report your high school GPA.

   1. less than 2.00
   2. 2.00 – 2.49
   3. 2.50 – 2.99
   4. 3.00 – 3.49
   5. 3.50 – 4.00

3. Report your current or intended major: _____. If you have not yet made a choice, write "undecided."

Thank you, again, for taking the time to help us improve the effectiveness of UofL's academic programs.
Best wishes to you in your academic endeavors!